



TITLE:

THE STUDY OF STATISTICS IN JAPAN : Its Development, Present State and Future Task

AUTHOR(S):

Ohashi, Ryuken

CITATION:

Ohashi, Ryuken. THE STUDY OF STATISTICS IN JAPAN : Its Development, Present State and Future Task. Kyoto University Economic Review 1959, 29(2): 40-77

ISSUE DATE:

1959-10

URL:

https://doi.org/10.11179/ker1926.29.2_40

RIGHT:

VOLUME XXIX

NUMBER 2

Kyoto University Economic Review

MEMOIRS OF THE FACULTY OF ECONOMICS
IN THE KYOTO UNIVERSITY

THE DEVELOPMENT OF STUDY ON THE
HISTORY OF JAPANESE ECONOMIC THOUGHT

Eijiro HONJO 1

SOCIAL THOUGHT OF R. H. TAWNEY

Yuzo DEGUCHI 17

THE STUDY OF STATISTICS IN JAPAN:
ITS DEVELOPMENT, PRESENT STATE,
AND FUTURE TASK

Ryoken OHASHI 48

OCTOBER • 1959

PUBLISHED BY THE FACULTY OF ECONOMICS
KYOTO UNIVERSITY • KYOTO, JAPAN

THE STUDY OF STATISTICS IN JAPAN :

Its Development, Present State and Future Task

By Ryuken OHASHI*

Introduction

It was in 1930 that the Nineteenth Session of the International Statistical Institute was held in Japan. Now, the Thirty-Second Congress is scheduled to be held again in Japan in 1960 after full thirty years. Experiencing a lost war in the middle of this period, in what respects and how has Japanese statistics developed and stagnated? This is a question extending to the fields of statistical survey history, statistical utilization history as well as the history of statistical theory, but the viewpoint of our discussion in this paper may be summarized as follows :

As known to all, the year nineteen-thirty was the time when Japan was also in the midst of a panic, and the confrontation between capital and labor was very severe. By that time, monopoly capital had already been established, and the central subject of the science of statistics has been moving from "Statistics for statistical investigators", that is, the conventional type of statistics intended to serve the absolutism bureaucracy of the nation, to "Statistics for the users", which claims the capitalistic use of statistics.

In Japan in 1960, which is said to be the year of unprecedented prosperity, the laboring classes have grown up to such an extent that they are now playing a principal role in the field of statistics with its foothold firmly established in labor union which has become legal after the lost war as the turning point. Now we have almost come to the stage where we set to ourselves a task to move from "Statistics for the users" and to set up "Statistics for the laboring classes". From such a viewpoint, this paper will discuss the development of statistics in Japan, its present status and future task.

I Development

The making and using of administrative statistics in Japan is presumed to date from sometime between the middle of the third century and the

* Assistant Professor of Statistics at Kyoto University

beginning of the fourth century, during which period the unification of the ancient state was in progress.¹⁾ The earliest records of census-taking (the original census registers) still existing in Japan are the twelve *ri* of the second year of Taihō (702) and the eight *ri* of the fifth year of Yōrō (721), both originals being preserved in the Shōsōin Treasure-house in Nara. (a *ri* represents a district inhabited by 50 families)

The feudal state succeeding the down-fall of the ancient state also conducted the land survey (*ANDO*: the official approval of land-ownership in the age of military ascendancy) out of practical necessity of administration, but what is worthy of our particular attention in the history of survey would be the Taiko Land Survey of 1580 which marked the feudal system of the latter modern period, and the land reform of 1873 by the Meiji Restoration Government which marks the starting-point of modern capitalist society. During the Tokugawa feudal reign thenceforth, there developed the temple register, and also begun to be accumulated personal records of observation by warriors, industrious farmers, merchants, etc. During this period statistical works appeared, and the spontaneous advent of statistical ideas can be observed.²⁾ But it is in the latter half of the nineteenth century or the period between the closing days of the shogunate and the early years of Meiji (this corresponds to the period of primitive accumulation of capital in Japan) that statistics in the modern sense of the word first appeared in our country; it was after the introduction of statistical literatures and books on the science of statistics from abroad.³⁾

(1) The first stage of the transplantation of statistics in Japan corresponds to the first stage of the transplantation of economics, that is, the period during which time economic doctrines of advanced capitalist nations were introduced simultaneously to Japan in the period of primitive accumulation of capital. At this stage, the science of statistics, including *Staatenkunde* (Achenwall's statistics) was introduced from the standpoint of the bureaucrat of an absolutist state by the samurai-class of the western school (as opposed to the Japanese classical school or the Chinese school), namely Koji Sugi

1) Le Comte Yanagisawa, *Histoire Critique des Travaux au Japon*, Bulletin de L'institut International de Statistique, Tome XIX-3e, 1912, p. 245-306.; Yasue Yanagisawa, *History of Statistical Undertaking*, 1938; Ryuken Ohashi, *The Origin and Nature of Administrative Statistics of Ancient Japan*, *The Statistics: Journal of the Society of Economic Statistics*, Vol. 1, No. 4, 1956.

2) Katsuji Kojima, *History of Statistical Culture of Japan*, *NANIWA NO KAGAMI*, August 1941—December 1942.

3) Katsuji Kojima & Takeo Matsuno, edited by, *The Bibliography of Statistical Rare Books in Japan*, January 1940; Tadao Naito, *Japanese Translations of Statistical Literatures*, *Bulletin of the OHARA Social Science Institute*, No. 5, January 1941; The Bureau of Statistics of the Cabinet, *An Eighty-years History*, 1951; The Agricultural and Forestry Statistical Association, edited by, *Chronology of Statistical Survey of Japan*, 1952.

(1828-1917)⁴⁾ and Ayatoshi Kure (1851-1918).⁵⁾ In the history of statistical survey, Koji Sugi is a pioneer of modern statistical survey in Japan (*SURUGA-NO-KUNI JIMBETSU SHIRABE*—The Census of the Suruga Province, 1868), and in the history of the theory of statistics, he stands on the startingpoint of modern statistics of Japan as the first introducer of German social statistics (Max Haushofer, *Lehr-und Handbuch der Statistik*, 1872). Ayatoshi Kure played an active part as a government statistician, but was best known above all as the introducer of Anglo-American statistics. Both played a great role as educators and exponents of statistics during the early period of transplantation. The main task of the statistical world at this stage was to establish modern statistics necessitated by new Japan, and to prepare the organization of statistical survey for that purpose. The Statistical Journal (*TOKEI SHUSHI*) which was the organ of the Tokyo Statistical Association (November 1880 was the first number put out by the editorial committees of Kiyohisa Mozume and Ayatoshi Kure), the Statistic Journal (*STATISTIC ZASSHI*) (the first number put out in May 1886 by Koji Sugi and Taichi Sera) reflect the then prevailing situation of this period since 1880 in the concrete.

(2) The second stage of the transplantation of statistics in Japan was the period when industrial capital was established in Japan, and corresponds to the second stage of transplantation of economics, that is, the age of the social policy school. Japan which made a late start strived for protection and fosterage of capital under the patronage of absolute emperor in order to catch up with advanced capitalist nations within a short period. This took the shape of the low price of rice, low wages, precedence of the military as a means to debouch into the Asian market, etc; any of these things could not be accomplished without enforcing tremendous sacrifice to the people. In the face of such situation, the theory of the German social policy school was introduced, the main task of which was to provide a solution from the standpoint of absolutism to the "social problems" on the side of the people. From the nature of its task, this science calls for spot investigation or statistical research, and this part of study was to be taken charge of by the German social statistics which was introduced by Iwasaburo Takano⁶⁾ (1871-

4) Taichi Sera, edited by, Collection of Lectures by Prof. Sugi, 1902; Toshiyasu Kawai, edited by, Autobiography of Koji Sugi, 1917; Iwasaburo Takano, Koji Sugi and Statistics of Our Country, *Studies in the History of Social Statistics* (the 6th article), 1947.

5) Tateru Kure, edited by, Ayatoshi Kure, 1920; Takahiro Harada, edited by, Ayatoshi Kure, 1933.

6) Iwasaburo Takano, *Studies in Statistics*, 1915; *Study on the History of Social Statistics*, 1925, 1947; Selection of the Statistical Classics, translated under his supervision, 1940-1949; Iwasaburo Takano's biography and his writings, *Bulletin of Research material Office of OHARA Social Science Institute*, No. 49, Sept. 1959; the posthumous manuscripts of Iwasaburo Takano, "A Part of Flea" to be published in 1960.

1949), Seiji Takarabe⁷⁾ (1881–1940), Kotaro Fujimoto (1880–) and others.

It was during this period that the science of statistics took root verily in Japan, and it is much indebted to Iwasaburo Takano. The credit of founding the science of statistics in Japan in the true sense of the word has been claimed for him.⁸⁾ Avoiding to discuss the problems of statistics separately from his socialist theory, he always attempted to apprehend them consistently from his own view-point of social policy liberalism, being influenced by Lujo Brentano, Takano was always representing the advanced guards of meliorism. Thanks to his admirable effort, the Japanese statistics could successfully pass the confines of mere handbook knowledge of statistical techniques, and become a real social science founded on a secure basis of its methodology. And herein lies the very contribution of Iwasaburo Takano in the history of the theory of statistics. In the history of statistical survey, all the credit of initiating the investigation of household economy for the first time in Japan (the investigation of household economy of twenty workmen in Tokyo, 1916) goes to him, too. In the history of the utilization of statistics, he was a distinguished scholar who detected unique laws of Japanese population by the application of vital and economic statistics (*TOKEI-GAKU KENKYU*: Studies in the Science of Statistics, 1915). Further, in the history of teaching of statistics, he not only instituted the statistics course in the Tokyo Imperial University before any other national university in Japan (1903), but also made the faculty of economics independent from the faculty of law (1919). His achievements in the field of statistics are important beyond dispute, but what merits more of our attention is the fact that his contention as well as his conduct as a socialist has always been consistent with his position of “social policy liberalism”. This well explains why he produced so many excellent “friends of the people” among his disciples.

(3) The third stage of the development of the science of statistics in Japan was the period when a regular financial capital was established in Japan, and it corresponds to the third stage of the development of economics, that is, the age of two hostile schools of Marxian economics and Austrian economics being pitted against each other. The social policy school which had taken the lead in the academic world of economics in Japan in the preceding stage had now lost its progressive role as the socialist movement emerged, and it was replaced by Marxian economics. The science of statistics in Japan reached a new stage in the theoretical history of statistics

7) Seiji Takarabe, *A Study on Quetelet*, 1911; *An Introduction to Social Statistics*, 1911; *An Economic Eye*, 1919; *The Death of Professor Takarabe*, *KEIZAI RONSO* (*Kyoto University Economic Review*), Vol. 51, No. 2, August 1940.

8) Hyoe Ouchi, *TAKANO IWASABURO, Statistical Dictionary*, 1951.

under the direct influence of Marxism during this period. In other words, progressive statisticians of Japan at this period tried deliberately to introduce materialistic dialectics of Marxism as the methodology of statistical study. However, in those days Japan already had a fairly strong tendency towards militarism, and therefore, they adopted a conciliatory policy, and camouflaged their study under the name of German social statistics. As a result, their study was tinged with an eclectic color, although they were the very people who achieved the greatest results in the field of statistics proper. As the statisticians taking the position of social democracy as such, we can name Torazo Ninagawa⁹⁾ (1897-), Hiromi Arisawa¹⁰⁾ (1896-), Masao Takahashi (1901-), etc.

Torazo Ninagawa studied under Hajime Kawakami, a humanitarian Marxist, and took charge of the statistics course in the faculty of economics, Kyoto Imperial University as the successor of Seiji Takarabe, a social statistician. It was Ninagawa who succeeded most in systematizing theoretical statistics during this period. His distinguished achievements recorded in the history of the theory of statistics are found in the social group theory which he set up as a basic theory of statistics and tried to develop theoretically all the problems pertaining to the theory of statistics from it. His theory is coherent materialistically and copy-theoretically, but is criticized as a mechanical and non-dialectic theory.¹¹⁾

So far he made no contribution to be recorded in the history of statistical survey, but in the history of utilization of statistics, we can find some excellent studies like "The Meaning of Price Index" among his early writings. Nevertheless, nothing could be comparable with his studies in the sphere of the theory of statistics which was his main province. Establishing "the position of the user of statistics", he reexamined from this position the problems involved in the process of making of statistics as the problems of statistical criticism (examination of the correctness of the technical procedure of making of statistics, and criticism of the reliability of the theoretical process of making

9) Torazo Ninagawa, *The Study of Statistics*, Book 1, 1931; *Some Basic Problems in the Use of Statistics*, 1932; *An Introduction to Statistics*, 1934.

10) Hiromi Arisawa, *An Outline of Statistics* (Kaizosha Publishing Co., *A Complete Collection of Economics*, XXXV), 1930; *A Lecture on Statistics*, Book 1, 1934; *Statistics*, (co-authorship) 1956; As to the nature of Arisawa Statistics, see Hiromi Arisawa, "Learning, Idea and Man", 1957, and such other works as "Social Statistics and Me", *The Statistics*, No. 6, April 1958., "Statistics and Me" in *The Invitation to Statistics*, March 1959 (edited under a joint authorship of him, Naito and others), "Me and Economics", *Economic Seminar* September issue, 1959, etc.

11) Meishu Kakehashi, *Statistics and An Outlook on the World*, *The Philosophical Concept of Material*, 1934; Koichiro Utsumi, *Dialectics and the Ninagawa Statistics*, *The Statistics*, No. 1, June 1955 issued by the Society of Economic Statistics.

of statistics) and of statistical understanding grounded on the conceptual basis of "social groups", while he developed the problems involved in the process of utilizing of statistics as the morphology of statistical utilization grounded on the conceptual basis of "the groups of statistical value". Thus, he contributed greatly towards advancing theoretical systematization of statistics by his group theory.

Hiromi Arisawa took charge of the statistics course in the faculty of economics, Tokyo Imperial University as the successor of Iwasaburo Takano and Yasuyuki Itoi. He took it as the kernel of his task of statistical theory to define statistical methods to rest on the dialectic understanding of contingency and necessity. His achievement in the sphere of the theory of statistics was this dialectic setting of the task. He himself says, "I don't think I made any contribution to the Japanese statistical world. If there is any, it must be very trivial, and is to be found in my efforts of seeking for the foundation of statistical methods by pursuing the relation between contingency and necessity".¹²⁾

His achievements in the sphere of statistical survey were only those which were produced since he became associated with the Statistical Committee after the war, but more important of his contributions are to be found in the sphere of utilization of statistics, namely his studies in the Japanese capitalism by use of statistics from the position of social democracy (The Statistical Tables and Diagrams of Japanese Economy, *KAIZOSHA's* Complete Collection of Economics, XXXIV, LIV).¹³⁾ It has a great significance because it was the demonstration of an attitude to use statistics as a means of conveying truth to the people against the then prevailing militarism tendency.

It was "The Marxism", the theoretical organ of the Japanese Communist Party (the first number issued in May 1924) that paved the way for the use of statistics from the Marxian stand-point in opposition to the militarism tendency of Japan. In the July issue of 1924, Shiro Matsuzaki presented his figures of "exploitation rates of spinning labor" in the five biggest spinning mills of Japan. And also, in a magazine named "The Sun", Eitaro Noro commented on the views of Kamekichi Takahashi¹⁴⁾

12) Hiromi Arisawa, *Learning, Idea and Man*, 1957, pp. 241-2 (The SEKAI, April 1959, p. 167)

13) Kaizosha Publishing Co., *A Complete Collection of Economics*, XXXIV, LIV. (Books, I, II, III and Supplement), 1931-1933., *A Pictorial Presentation of Japanese Economy*, 1952 and *A Pictorial Presentation of World Economy*, 1952, 1954, both published after the war, in which Hiromi Arisawa participated, lost his resistance spirit of the pre-war period.

14) Kamekichi Takahashi, *The Imperialistic Position of the Japanese Capitalism*, *The Sun*, April, 1927; *The Transmutation of Imperialism at the Last Stage*, *The Social Science*, April 1927; Kamekichi Takahashi is the target of their criticism, and cannot be disregarded in view of his important role in producing problems in the history of utilization of statistics.

(1894—) in his article entitled “Stupefied Petit Imperialist” (September 1927). His bitter attack on ‘*the self-contradiction of the numeral hypocrite*’ in the third paragraph, and other charges in other passages are worthy of attention.

The Nineteenth Session of the International Statistical Institute was held in Japan in 1930, and midst the rising interest in statistics, “The class character in Statistics” was appeared in *Chuō-kōron*, November 1930, written by Hirokatsu Ogura under the pen-name of Jiro Nomura. It was the first time that a general magazine like *Chuō-Kōron* has picked up statistical criticism. The *KOZA* school¹⁵⁾ which comes under the same category left great achievements in the sphere of utilization of statistics, and one of the most representative works of this school is Moritaro Yamada’s “The Analysis of Japanese Capitalism” (1934).

It is Kinnosuke Ogura¹⁶⁾ (1885—), the author of “Arithmetics of the Class Society” (1929) and “Mathematics of the Class Society” (1930), whom we should not overlook as a mathematician and statistician sympathiser with Marxism. From his position as the “friend of the People” he fought against the militarism tendency through the problems of mathematics and statistics. His critical and enlightening spirit was inherited by the Council of Mathematical Education and the Neo-Mathematicians Group after the war.

The Austrian and the Lausanne schools had some influence on Torazo Ninagawa, Hiromi Arisawa and so forth, but the people who were influenced foremost by the schools of this line were Yuzo Morita¹⁷⁾ (1901—), Ichiro Nakayama¹⁸⁾ (1898—), and other disciples of Kotaro Fujimoto of Tokyo Commercial College. The super-historical approach of this school to economic phenomena necessarily turns statistics an art of universal science. Taking it as their own footing not to stick to any one particular class or ideological views, they instantly became the believers of practical mathematical statistics immediately after the war, without feeling any resistance or even being

15) Theoretically speaking, the *KOZA* school stands on the side of Marxism just like the Rōnō school (the Laborers and Peasants’ school). People who supported the views represented by *NIHON SHIHONSHUGI KOZA* (the Lecture on Japanese Capitalism) group of prewar days were called the *KOZA* school.

16) Kinnosuke Ogura, *Statistical Study Method*, 1925; *The Process of formation of Modern Mathematics in Japan—Mathematics in the Meiji period*, 1942; *From the Window of Mathematics*, *Kadokawa Library*, 1953.

17) Yuzo Morita, *An Outline of Statistics*, 1932, 1956; *Theory and Practice of Price Index*, 1935; *A Summary of Statistics*, 1948; *Method of Statistical Analysis of Economic Fluctuations*, 1955.

18) Jiro Sakamoto, *Professor Nakayama as a Man and His Doctrine, in Essay Compiled in Memory of the Sixty First Birthday of Dr. Ichiro Nakayama*, 1958. As the managing director of the Society for the Study of Statistics, Ichiro Nakayama is the chief editor of many reports of statistical studies on Japanese economy. See *A Ten-Year History of the Society for the Study of Statistics*, 1958.

imbued with the false idea as if it would contributed towards the progress of statistics. Achievements we can credit to this school in the sphere of statistics would rather be found in the postwar period.

To the statisticians of private universities and colleges such as Waseda, Keiō, Doshisha and the like, it was difficult to adopt the Marxian view-point under such ideological circumstances prevailing in Japan at that time, owing to the special nature of private university and college. Therefore, many of them had to make a compromise and stood on eclectic view-point.

The particular events in the statistical world during this period which invite our particular attention were that the nineteenth Congress of International Statistical Association was held in Japan (in 1930), and that the Japan Statistical Association was founded by young social statisticians (in 1931).

(4) The fourth stage of the development of statistics in Japan was the period of transition to state monopoly capitalism, and it corresponds to the fourth stage of the development of economics, that is, the period when the Fascist theories of new system of economics were predominant. Japan of this period was on a semi-war or a war footing, where an inspirational domination by military and bureaucratic powers was overrunning. In this period, positivism in research waned on the whole, and no noteworthy work was recorded in the sphere of statistical theory.

In the sphere of statistical survey, however, we should not miss the great revision of the statistical survey of agriculture and forestry (1941) conducted under the leadership of Yasuo Kondo¹⁹⁾ from the stand-point of developing agricultural productivity. In the sphere of utilization of statistics, the use of statistics by the military authorities attracts our attention, although it is undeniable that some mathematical statisticians made fair-weather with the military authorities.²⁰⁾ At any rate, we may mention the founding of the Research Association of Statistical Science in the Faculty of Science at Kyushu University (February 1941), and the opening of the Institute of Statistical Mathematics in the Ministry of Education (June 1944) as the

19) Yasuo Kondo, *The Essentials of the Revision of Agricultural and Forestry Statistics*, 1941; *Some Problems of Agricultural and Forestry Statistics*, 1950; *History of Agricultural and Forestry Statistical Survey (How did politics change statistics?)*, *The Statistical Analysis of Japanese Agriculture*, 1953.

20) Ken-ichi Akiyama, (*History of Mathematical Statistics in Japan*, *The Monthly Report of the All-Japan Mathematics Liaison Society*, Vol. 3, No. 3, February 1956), points out in a less abstract way mathematical statisticians' currying favor with the military authorities. Also the comparison between *The Name List of the Members of the Research Association of Statistical Science* (July 1941) and *The General List of the Applicants for A Collection of Statistical Classics* (April 1941) makes it easy for us to trace up the members of both ingratulatory and resistant camps respectively.

greatest events in the sphere of statistical teaching.

During this period, the study of statistics could not escape decay unless it was allied with the military science. Notwithstanding this adverse climate, "The Selection of Statistical Classics" (12 volumes, 1940-1949) was published as a fruit of continued resistance by Iwasaburo Takano as the editorial supervisor with the cooperation of social democrat scholars as the translators. It merits high praise.

(5) The fifth stage of the development of statistics in Japan was the reorganization period of monopolized capital in Japan after the war, and it corresponds to the fifth stage of the development of economics, that is, the period of opposition between pragmatic modern economics beneficial to monopoly capital and Marxian economics favorable to the working class. Statisticians who had kept away from storm and confined themselves to academism now recovered freedom. Some of them openly adhered to monopoly capital and the administrative organs of the state subjected to it. Others could easily be identified as the friends of the working class. The purpose of this paper is to brief the situation of statistical studies in both camps at this stage and to determine the future task imposed upon our shoulders.

The reorganization period of monopolized capital in post-war Japan may be divided into (i) American occupation period and (ii) San Francisco period, as a matter of convenience. The former may further be divided into two periods demarcated by the 2-1 strike (February 1 in 1947) which represents the zenith of the power of the Japanese working class, while the latter may also be divided into two periods demarcated by the so-called *JIMMU* boom (in 1956) which indicates the perfect recovery of monopoly capital of Japan. Our discussion in this paper will follow such classification of periods for form's sake, but because we do not have space nor need of minute analysis and consideration, we shall include the postwar period in our discussion of "the present state", and review the present status of statistical studies.

II Present State

The statistical survey activity of Japan under the rule of administrative bureaucracy has rapidly declined from the Sino-Japanese war through the Pacific war, and became paralysed almost perfectly with the end of the lost war. Under these circumstances, the American occupation forces started promptly upon their landing the statistical survey activity for itself while they requested the Japanese government for statistical informations necessary for the occupation administration.

The statistical survey conducted by the American occupation forces promptly upon their landing was (1) the survey of mining and manufacturing industries (all industries whose total volume of business in 1944 exceeded a million yen), based on the instruction of Colonel R.C. Kramer, Chief of the Economic and Scientific Section (the instruction of September 19, 1945 demanded those industries to submit the reports to the Liaison Office of the Bureau of General Affairs, the Ministry of Commerce and Industry not later than October 15). Then, (2) the American occupation forces issued a directive (on October 22) demanding statistical figures from fifteen Zaibatsu (large industrial and banking combinations) (to be submitted within 45 days), and investigated them thoroughly. (3) The investigation office of bombing operation, U.S. Army made an investigation of the effects of bombing upon important factories and mills in urban districts. (4) The 32nd Military Government conducted a close investigation of factories within its jurisdiction around Tokyo (May 1946). Besides, (5) almost all sections and departments of the General Headquarters conducted surveys of their own interests (for

The following foot-notes from (1) through (13) are some references (in order of publishing date) which touched on the postwar tendency of the statistical world in Japan.

- 1) Bunkichi Yuzuriha, Statistical Administration (Book 9, Lectures on Statistics), December 1949.
- 2) Shiro Yamanaka and Saburo Kawai, The legislation for Statistics and the Statistical System, January 1950.
- 3) An Eighty-Year History of the Statistical Bureau, Office of the Prime Minister, December 1951.
- 4) Chifuyu Masaki and Shichiro Matsukawa, The Development of Statistics of Our Country after the War, included in A Guide-Book of Statistical Survey, July 1951.
- 5) Motosaburo Masuyama, The Development of the Sampling Survey Method in Japan (The Report to the 27th International Statistical Conference) (included in A Guide-Book of Sampling Survey), April 1952.
- 6) Chifuyu Masaki, An Outline of Statistics of Japan and Its Problems, included in *An Introduction to Economic Statistics*, edited by Hiromi Arisawa, September 1953.
- 7) Ken-ichi Akiyama, History of Mathematical Statistics in Japan (History of Japanese Mathematics III,) *The Monthly Report of the All-Japan Mathematics Liaison Society*, Vol. 3, No. 3, February 1956.
- 8) Heihachi Sakamoto, The Science of Stochastics; the Progress of Science and Technology during the Ten Years after the War, *The Nature*, May issue of 1956.
- 9) Masao Goto and Shichiro Matsukawa, Government Statistical Survey after the Independence, included in *The Review of Statistical Survey*, November 1956.
- 10) Masao Goto, Looking Back the Ten Years after the War: The Statistics of Japan that Came Along with Dr. Ouchi, *Statistical Reporter of Japan*, Vol. 6, No. 5, May, 1957.
- 11) A Ten-Year History of the Society for the Study of Statistics, March 1958.
- 12) Shoichiro Uesugi, An Outline of Statistics in Postwar Japan; Gegen den amerikanischen Vormundschaft in der japanischen Statistik, *Statistische Praxis* 1958, Heft 8.
- 13) Kenshō Gotō, On Outline of History of Statistical theories in Japan, included in *Problems of Japanese Capitalism* edited by Moritarō Yamada, 1960.

example, the economic survey of temples conducted by the Religious Study Group of the Civil Information and Education Section).

Thus, for the first year or so of occupation, the American occupation forces conducted surveys for themselves, without relying upon the paralysed administrative organization of Japan, and obtained materials of their own need. But for an efficient operation of the occupation administration, it was necessary to rebuild the Japanese organization of statistical survey which would be operated by the Japanese themselves, so that the occupation forces might be relieved of the burdens and simply stand by to pick up the fruits for their critical use. So, there followed the visit of the statistical mission headed by Stuart A. Rice to Japan,¹⁴⁾ and with a backing of the occupation forces could the Japanese organization of statistical survey be rebuilt after proper adjustment under the leadership of the so-called Laborers and Peasants school professors¹⁵⁾ of the Statistical Committee, the leading members of which were chosen from the members of the Japanese Institute of Statistics.¹⁶⁾ With the end of occupation, however, these statistical specialists were driven out of important posts, and the old rule of the administrative bureaucrats over the statistical organization was regained. Since then, the results of administrative use of statistics have been published in the form of the 'white paper', but what we found in it were the theory and ideas ruled by americanized modern economics.

With the view of evaluating the achievements and contribution in the spheres of the statistical survey, the utilization of statistics and the theory of statistics during this period, we shall group the people concerned with statistics for the convenience of our discussion under the headings of (1) statistical officials of government and monopoly capital (technical expert type, conservative type, progressive type), (2) mathematical statisticians (technical expert type, theorist type, pragmatist type), (3) social statisticians (the modern economics school — equilibrium theorist type, Keynesian type, econometrician type, —, the Marxian economics school — laborers and peasants school type, Koza school type). A simplification such as this classification may be quite embarrassing to some readers, and I would appreciate any comment or criticism

14) Stuart A. Rice, Chief of the Statistical Mission, *The Necessity for Modernization of the Statistical System of Japan*, translated by the Statistical Committee's Office, February 1949., Stuart A. Rice and Calvert L. Dedrick, *Japanese Statistical Organization*, (A Report of the Second Statistical Mission to Japan to the Supreme Commander, for the Allied Powers), translated by Minobe and Masaki, October 1951.

15) Ryokichi Minobe, *Democracy in Anguish*, March 1959, see p. 135 ff. Among the so-called Laborers and Peasants school professors, there are Hyōe Ouchi, Hiromi Arisawa, Gitarō Wakimura, Masao Takahashi, Ryōkichi Minobe, etc.

16) Hyōe Ouchi, *Economics of Fifty Years* (Book II.), June 1959, pp. 330-337.

which may help to correct my errors.

The greatest achievement of this period in Japanese statistics was the Americanization of statistics effected under the direct guidance of the American occupation forces in the name of making international comparison possible. To speak in a less abstract way, it may be summarized as follows: (1) the modernization of the statistical system, (2) the forced introduction of the sampling survey method, its theory and techniques, (3) the ruling over the officialdom and academic world by the theories and ideas of modern economics. Perhaps it would be the group of the so-called laborers and peasants school professors represented by Hyōe Ouchi who played the leading role in bringing about that achievement. These social democratic scholars had shown a resistant attitude toward the warlike powers during the war, and published "A Collection of Statistical Classics" under Iwasaburo Takano. It was splendid, indeed. After the war, they allied with the bureaucrats and became the central power of the Statistical Committee for the reconstruction of Japanese statistical system. In accordance with the above classification, we shall review the post-war situation.

- 1 The statistical officials of government and monopoly capital (the technical expert type, the conservative type, the progressive type)

From its very origin, statistics was primarily made for the use by the ruling class and it is true regardless of differences in the system of society.

It is not necessarily confined to the statistical officials, but the author wants to make his phraseology clear in order to show the whereabouts of the problem. By the technical expert type, the author means those statisticians who take it as their creed of activity to hold down their own conscious products to zero and to deal with the problem technically and mechanically in accordance with the given direction. By the conservative and the progressive, those who would not be satisfied with mere technical and mechanical handling of the matter and try to make some addition of their own conscious product. The former respects maintenance of the status quo, and the latter respects destruction of the status quo. Both the technical expert type and the conservative type are essential to the maintenance of tradition, but since this paper mainly concerns the development, we shall refer only to the so-called progressive type. Therefore, our discussion on each heading will be conducted within this limit.

What has ruled Japan after the lost war was the American occupation forces. In accordance with the "surrender document", they demanded statistical data necessary for the occupation administration from the Japanese side. Taking into account the then prevailing situation of Japan which looked to present some possibility of a socialist cabinet to be realized, the administrative officials of the Japanese government mobilized the laborers and peasants school professors for the reconstruction of the statistical survey system of Japan. Hyōe Ouchi, representing the group, "gave up his own

precepts" and organized the Statistical Committee, accepting the offer to become the chairman. According to him, the aims of their efforts may be summarized as "the two propositions of (i) to neutralize statistics from politics, and (ii) to centralize statistics-making organizations in order to obtain plenty of accurate statistics" (Footnote 16, p. 403). As a consequence, the statistical departments and sections of all ministries were reinforced in 1948, and only professional statisticians were qualified to fill the post of the director of the Statistical Bureau of Cabinet or of any other bureau of the Ministries of Agriculture and Forestry, Commerce and Industry, Labor, and Welfare. However, the second Yoshida Cabinet retrenched statistical bureaux of all ministries on the occasion of the first administrative readjustment, and forced out professional statisticians like Chifuyu Masaki or Yasuo Kondō from their posts of bureau director. Thus, the old custom of appointing non-statistician administrative officer to the post of chief of statistical department or section were recovered. At the time of the second administrative readjustment effected in 1951, the statistical organization of the Ministry of Agriculture and Forestry was curtailed, and in 1952 the Statistical Committee was abolished, leaving the affairs to the Statistics Standard Department of the Board of Administrative Management. So, upon the termination of the American occupation, the influence of the Laborers and Peasants school professors over the statistical survey organization rebuilt after the lost war was rooted out and the control was regained by administrative bureaucrats as before.

At any rate, the statistical survey organization rebuilt during the occupation served the Japanese government two ways: first, she could meet the demand of the occupation forces for statistical information; second, she could make administrative use of it, and publish its products in the form of "white paper" before the people. The custom of announcing administrative use to the public is one of the products of the democratic spirit of the time when the power of the laboring class reached its zenith. That is, experiencing the 2-1 strike of (February 1) 1947, the Socialist party won a majority of 143 seats in the election of the members of the House of Representative held in April, and became the first party. In May, the Katayama Socialist Cabinet was formed. At that time, social-democrats were taking the lead in the making and using of statistics in league with the leftists of modern economics school, and had the Economic Stabilization Office to publish "the Report on Economic Reality" (Appendix-Statistics Section) (July 1948) which was received very favorably. This custom is still alive today, and nothing could be greater than this achievement in the sphere of utilization of statistics of this period. Having beaten off the theory and concept of Marxian

economics, "the white paper" of today became dominated by the theory and concept of modern economics in every particular way so that it is commented as a "higgledy-piggledy white paper" (Footnote 16, p. 473) by Hyoe Ouchi. His comment is correct, of course, but wasn't it the group of the Laborers and Peasants school professors represented by professor Hyoe Ouchi himself, who having lost the fighting spirit to criticize and resist American type modern economic theory and modern statistical theory, surrendered the basic theory and concept of making and using of statistics to modern economists. This point requires further consideration.

So far we have seen the situation on the side of government officers. Now, I want to bring up a couple of problems on the side of the ordinary staff. Unlike the tax collection system or the military and police structures, the statistical organization in which the statistical staff is servicing is the weakest one liable to fall a victim to the administrative retrenchment first. As we have seen already, the statistical organization which was expanded under the leadership of the Socialist party with a strong backing of the Rice Statistical Mission was doomed to curtailment by the first administrative readjustment (June 1949) no sooner was the second Yoshida Cabinet of the conservative party established. Prior to this, the statistical staffs of all ministries put forth an united front in 1948 and struggled to improve their salaries which were far lower than those of the general administration staff. However, the comparatively higher salaries of the statistical staff of the Ministry of Agriculture and Forestry than their associates of other ministries caused a breach between them, and the statistical staff of the Ministry of Agriculture and Forestry seceded from the union, and the concerted strife ended in a failure. The struggle against the curtailment of 1949 took the shape of a go-hand-in-hand-together struggle or an *avec* struggle as we Japanese call it because both senior and junior officials happened to have identical interests, but the result was that only the Ministry of Agriculture and Forestry whose senior officials had stronger strife consciousness was spared curtailment. Nevertheless, the government workers union of the Ministry of Agriculture and Forestry was also weakened by the red-purge of the government personnel effected in 1950, and was hard hit by the second administrative readjustment of 1951. In 1952 the reform bill of the administrative organization passed the 13th ordinary diet, but the Union of Public Officials had rapidly been weakened since No. 201 government ordinance (July 1948). In addition, the May-day Bloodshed of (1952) was also responsible for the emasculation of the Union. Under these circumstances the "Committee for Joint Strife against Curtailment of Statistical Organization" was organized by the interested officials of the Statistical Survey Sections of

the Ministries of Agriculture and Forestry, Labor, Welfare, etc. More strongly supported by senior officers of the department and sections rather than by the union members, the Committee failed to realize the anticipated result from the struggle. In this way, the Statistical Committee which has been the mainspring of the post-war statistical reformation since it was founded in December 1946 upon the termination of the occupation of Japan by the American forces, died out in July 1952.

There must be some differences between the central government and local posts or among different ministries, but generally speaking, the statistical staff of government may be divided into two categories: namely, the staff in charge of statistical survey, and the staff responsible to utilization of statistics. Some officials in the first category like the statistical table-making staff are low-class officials closer to physical workers, whereas the analysis staff in the second category is a high-class staff. Accordingly, the forms of labor union activity of both categories are not always the same, but there is no doubt that the activity of these people has a great influence upon the progress of government statistics. A typical example of use of statistics by government statistical workers from the standpoint of a laboring class during this period is "the Unemployment White Paper—the Real Condition of the Unemployed and the Essential Nature of the Unemployment Program of the Government (June 1949) published by the Confederation of All Workers Unions of the Ministry of Labor in opposition to the official report drawn from the standpoint of the Ministry of Labor. It is worthy of our notice as a good example indicating the new field in the sphere of utilization of statistics exploited by government statistical officials who tried to tell the truth.

However, with the weakening of the unions of government officials, the style of government documents underwent a change. In the belief that government documents are not the document of a research organization, but the documents of a government organization, a tendency to avoid the criticism of datum or the comments on policy is getting strong. As a result, we often find the disagreement between data and conclusion in the report. And we should not overlook it as a new form of the resistance of government officials against the oppression from up above.

The statistical staff of a monopoly capital enterprise is chiefly engaged in the making and using of the intra-business statistics (business statistics) and in the collection and utilization of the extra-business statistics (economic statistics), but the result of utilization needs not be made known to the public except for advertisement purposes, or it would even be regarded as a business secrecy. It is quite natural that the statistical staff on such duties uses statistics for the benefit of the capitalist, but the important question is how

the same statistical staff uses statistics from its own standpoint of the laboring class. I don't have enough space to go into the study of this question, but I have no doubt that the criticism of business statistics by labor unions as well as their demand contributes greatly toward the progress of statistics.

2 Mathematical Statisticians (technical expert type, theorist type, pragmatist type)

The introduction of mathematical statistics in Japan lagged a little bit behind social statistics. Rikitaro Fujisawa (1861-1933) taught statistics based on the theory of probability at Tokyo Law College in 1896, and opened in 1919 the course in mathematical statistics in the Faculty of Science, Tokyo Imperial University which had originally been called Tokyo Science College. For some time after that, the K. Pearsonian mathematical statistics was popular in Japan as well. It was in nineteen-thirties that the Fisherian theory emphasizing the concepts of "population and sample" was introduced, and the theory was imported and disseminated by Ryoichiro Sato, Toshio Kitagawa, Motosaburo Masuyama, Tatsuo Kawata, and the like. In April 1941, there was born the Research Association of Statistical Science with Toshio Kitagawa as the chairman. Under pledge of cooperation with the military, and with its special backing the leaders of the Society could have the Ministry of Education establish the Institute of Statistical Mathematics in June 1944. In opposition to such ingratiatory attitude of warlike mathematical statisticians toward the military, the Marxian social statisticians and the anti-war mathematicians assumed a critical and defying attitude. But anyway, the warlike statisticians grappled proudly with applied mathematical problems presented by the War.

The G.H.Q. Memorandum gave rise to a discussion over the maintenance or abolition of the Institute of Statistical Mathematics after the lost war, but the Institute was allowed to exist. Reflection on the cooperation with the military rose among mathematical statisticians, although we cannot generalize the manner and the extent of their reflection. Some of them thought that technicians had no social responsibility, while some others felt social responsibility and escaped from the field of application in order to seek safety in the study of pure mathematics. The rest of them rode on the waves of democratization positively, and played an active part in making practical use of mathematical method. These tendencies may be considered better by grouping the mathematical statisticians into the types of technical experts, theorists, and pragmatists. Since the problem at issue is the application of mathematical method to social phenomena, we are chiefly interested in the pragmatist type statisticians.

It is not clear whether because they did not have the definite theory of statistics or because they pretended in that way in order to secure the cooperation of technical experts, but the Marxian social democrats who played a leading part in reconstructing statistics after the war hardly attempted to criticize the formal mathematicians' tendency of applying unconditionally the mathematical statistics theory to social phenomena. They mobilized mathematical statisticians for the introduction, dissemination, and propaganda campaign of the technique of sampling survey. The so-called pragmatist type statisticians such as Toshio Kitagawa,¹⁾ Motosaburo Masuyama,²⁾ etc., distinguished the Fisherian mathematical statistics from the Pearsonian mathematics, and defined the former as the descriptive statistics, and the latter as the stochastic statistics or the science of stochastics, showing off the freshness and excellence of the stochastic statistics. Extending the distinction within mathematical statistics which was drawn from the premise of "the pure analytical collective" to statistics as a whole, and leaving their theoretical ground unconfirmed, they diverted the distinction to social statistics. Reviling at the traditional social statistics theory drawn from the premise of "the historical and social mass" as an out-dated descriptive statistics, they asserted that the stochastic statistics which fits in well with American-type econometrics is modern statistics, indeed (Footnote 1, p. 475 ff.). That the contention of Kitagawa or Masuyama had a great influence during this period may be partly attributable to the fact that the stochastics was advertised extensively as a new science (for instance, Masuyama was awarded the Asahi Prize in 1947), but largely due to the fact that their activity was well linked up with the leadership of the American occupation forces in the task of introducing the technique of sampling survey, and with the activities of modern economists in the bureaucratic machinery.

As Kenichi Akiyama's "History of Mathematical Statistics in Japan" justly points out, "the survey of deposit account by the Financial Management Bureau of the Ministry of Finance or the survey of labor power and the survey of consumer's price by the Office of the Prime Minister, all of which were conducted by Motosaburo Masuyama, Heihachi Sakamoto and their associates; the harvest statistics by the Ministry of Agriculture and Forestry, which was brought about by the cooperation of Chūichi Okuno and Matayoshi Hatamura: the income survey conducted by Nozomi Ishida and others or the survey of knowledge of reading and writing conducted throughout Japan: all these works were the products of the golden age of survey under discussion" (p. 33). We can find the details in the "Sampling

1) Toshio Kitagawa, *Cognition of Statistics*, December 1948.

2) Motosaburo Masuyama, *A Story of Stochastics*, 1949., *A Way to Stochastics*, 1950.

Survey Guide-Book" edited by the Society for the Study of Statistics.

The sampling survey technique was adopted widely in government statistics after the war and was made use of by bureaucrats for administrative purposes. Not only that, it was also used in monopoly capital enterprises as well for quality control or business management within the establishments or for market research or public opinion survey with the purpose of collecting outside informations. Quality control,³⁾ above all, was given an active guidance as an advanced technique of America by CCS of G. H. Q. for its transplantation in those giant enterprises which were spared dissolution. For example, in America the A.S.Q.C. was founded in February 1946, and only three months later, that is, in May, quality control was already started under the guidance of Magil of CCS at the Tamagawa factory of Nippon Electric Appliances Inc. It must be acknowledged, however, that the Japanese history of quality control dates back to the age of industrial rationalization in nineteen-twenties when the quality control method was first introduced to some factories of foreign capital or to the munition factories on an experimental basis. It was during the American occupation period that the method came into general use. In March 1947, W.E. Deming visited Japan and encouraged quality control and public opinion survey. In 1948, Sarasohn of CCS also played an active part in spreading quality control. Further in February 1949, the participants in the "Study Meeting of Professors of Electricity of Five Big Universities" from Tokyo University, Tokyo Technical University, Waseda University, Keio University and Nippon University, which was held under the sponsorship of Polkinghuan of CCS, were requested to attend the lectures of Sarasohn on quality control. In this manner, G. H. Q. was rather keen to transplant "the advanced American technique" of sampling survey in big industries or in university teaching of Japan.

In correspondence with this activity of G. H. Q., the Japanese side also showed an enthusiastic interest. For instance, the Society of Applied Dynamics of Japan opened the first summer seminar and made a great effort to

3) Kaoru Fujita, The History and Task of Quality Control in Our Country, *The Science*, June 1956, A Chronological Table of Quality Control, *The Quality Control*, published by Japan Scientific and Technical Association, June 1958 (this is the hundredth anniversary issue). And from the stand-point of a technical history, see Keiji Yajima, (Some Problems of Statistical Quality Control in Modern Technical History, *The Study of Scientific History*, NO. 31, September 1954; In relation to productivity and efficiency, the Japan Productivity Center, The Improvement of Productivity Series (NO. 102, Quality Control and Promotion of Productivity), February 1958; Osaka Prefectural Institute of Industrial Efficiency, A Chronological Table of Industrial Efficiency, October 1958; The Department of Standardization, the Academy of Industrial Technology, edited by, Industrial Standardization in Our Country, October 1959, etc.

propagate mathematical statistics among researchers of science and engineering and technicians in industrial field as the main-target audience. The seminar proved very successful, and the details of the seminar can be found in the "Applied Statistics" edited by the Society of Applied Dynamics of Japan in 1949.

Under these circumstances, the Institute of Statistical Mathematics was expanded in a great measure in 1947, and was divided into Section I (theory), Section II (natural science), and Section III (social science). In the sphere of theoretical study the American influence was again overwhelming. The mathematical statisticians of the United States might have had their own motive and good reason to cooperate with the military of their country. And from the experience of sequential pick-up inspection in those days of their cooperation with the military was the "sequential analysis" of Wald born. In the closing years of nineteen-forties Wald generalized it and advocated the statistical decision function, which gained popularity in the academic circle of America in about 1950. Japanese mathematical statisticians jumped at it readily. As to the situation of the Japan Mathematical Society and the Japan Statistical Society, we may have a more competent reporter majoring mathematical statistics.

The sampling survey technique met with a favorable reception in the field of natural science, too, and spread rapidly. I said the natural science field, but strictly speaking, it seemed to be received mainly in the technical field of natural science. I know little about how such a technique as this was and is valued in the pure theoretical field of natural science.

According to the special number of *the Science* entitled "the Stochastics and its Contribution to Modern Society" (*The Science*, October 1951), it may be concluded that the part played by mathematical statisticians in the field of natural science is neither great nor extensive as a matter of fact. Moreover, in the field of biological statistics, for instance, there was a strong criticism against the uncritical introduction of formal mathematical method in early days. For example, Riichi Kawakami⁴⁾ made a comment on "the merit of the application of the theory of small sample error to biological science" at the meeting of the Japan Statistical Society in November 1949, but the atmosphere of that day was not ripe to welcome such a comment yet. This is another subject which we had better leave to an appropriate reporter majoring natural science.

4) Riichi Kawakami, A Comment on the Merit of Application of the Theory of Small Sample Error to Biological Science, *Bulletin of the Japan Statistical Society*, 1949, published in March 1950, pp. 1-3. Also, in his another work, *Biological Statistics: the Theory of Sample Error*, September 1956, his criticism on the Masuyama Kitagawa theory is stated in detail.

The debouchment of mathematical statisticians into the field of social science was possible only when they successfully allied with modernistic economists or sociologists. It is universally known that in nineteen-thirties theoretical economics and statistics combined and gave birth to econometrics. Influenced by the Keynesian economics and going through the ordeal of the World War II, it became a very practical and policy-conscious science. Taking charge of the mathematical and statistical side of economics, mathematical statisticians participated in national projects or business enterprises through their new techniques such as the linear programming. These circumstances in the United States never failed to reflect on the academic circle of Japan under occupation.

"It was Koichi Miyazawa who responded to it most sensitively and quickly. Having once studied under Ryoichiro Sato before the war, he stayed at Kyushu University for a while after the war, and was conferred a degree of Ph. D. for his study on the theory of decision function when it was much in vogue in Japan. Later in 1953, he moved to the Faculty of Economics, Tokyo University. Then he shifted round to the exclusive study of econometrics." (Kenichi Akiyama, *The History of Mathematical Statistics in Japan*, p. 34)

The above is a typical example of the shifting from the field of applied mathematics to economics, and this kind of phenomenon has increased considerably after the war. And this tendency is related to the view of modern economics, which, viewing capitalist economy super-historically, and without making any distinction between the social and the natural phenomena, considers that both phenomena can be handled mathematically. If we push the view to its extreme mathematically, we will reach a formalistic conclusion that economics is nothing but a branch of applied mathematics. We are justified in believing that Marxian economists who have a regard for substance should oppose to such a view, but what we found there was the fact that even among these who profess to be the followers of Marx and Lenin, there were some people who supported the mathematical formalistic view. For example, in his "A Text-Book on Economics" (The Aoki Library, 1951), Shiro Toyota wrote as a zealous advertiser of stochastics as follows: "Stochastics is the new science of statistics based on a dialectic approach born of the criticism on the ordinary observational statistics which, empirio-criticism being its method, and the rearrangement and description of facts based on an extensive observation being its sole object, abandoned the pursuit of laws underlying those facts" (pp. 274-5).

It will thus be seen that even by Marxists was the American type mathematical statistics advertised as a "scientific" and "progressive" science.

With this atmosphere for a background, and despite the indisputable fact that the harvest statistics of that day was nothing but an artifice to force the farmers a compulsory supply of rice and barley, the progressionist officers of the Ministry of Agriculture and Forestry noised abroad as if the sampling survey procedure of "scientific and progressive" mathematical statistics necessarily produces a "scientific and progressive" fruit of investigation, and hence the administrative use of such a fruit would also be "scientific and progressive". It was the case with Yōichi Fukushima, for example, although I admit that his position as the chief of the Harvest Report Section, the Bureau of Statistical Investigation, the Ministry of Agriculture and Forestry at that time compelled him to participate in such a campaign.⁵⁾

However, the world census of agriculture of 1960, which had to adopt the "right crops from right land" policy instead of the conventional farming policy emphasizing production increase in the light of the past lesson of "the poverty inspite of rich harvest", is not a census for the whole country, but "a census for villages" smallest administrative units. Due to this change, the almighty sampling method of the Department of Agriculture and Forestry has practically broken down.⁶⁾

Also, there were some active leaders of the Japan Teachers Union, who, in conjunction with the enforcement of the new education system introduced from the United States (in April 1947), endorsed uncritically the so-called "objective test" for the statistical evaluation of education, and by them was propagated a formal mathematician logic that the normal distribution of examination marks bore witness to the soundness of the test.⁷⁾

As a good example of such formalistic logic, we can mention the achievement test conducted through-out Japan, from the entrance examination of a school to the promotion of a government official. But due to the fact that the achievement test has not much meaning when applied to these purposes, it was abolished in 1956. But with an intention to control the Japan Teachers Union, the Ministry of Education is planning to put in force the teacher's efficiency rating system through-out Japan according to a certain formula.

On the other hand, statistical mathematicians are considering that to-day's subject of statistical teaching should be "the transition from descriptive

5) Yōichi Fukushima, Some Problems of Harvest Statistics, *The Agricultural Technique*, Nos., 3, 4, & 5, 1949.

6) Michitake Kuga, The Future Course of Agricultural and Forestry Statistics. *Bulletin of the Statistical Investigation Department, Ministry of Agriculture and Forestry* No. 20., "The Village Records", A special issue of *The Survey of Agricultural and Forestry statistics*, Dec. 1959.

7) The Research Team of Kyoto Municipal Horikawa Senior High School, The Objective Test, May 1949. There are numerous examples of this kind.

statistics to stochastics". But the author thinks that subject cannot be found in the transition of the emphasis in such technical know-how of statistics, but in the effort of changing the Japanese people's way of thinking so that they can look at the reality concretely and critically without any preoccupation. We must pay attention to the view of the Japan Teachers Union concerning statistical teaching, advocating "education for the people".

If we set aside such social nature of the sampling survey technique as we have seen in that childish idea or illusion characteristic to a formalistic mathematician which was so widely popularized, and in that vague class-consciousness in actual utilization of statistics — such is the very object of analysis for social science —, and if we simply take the sampling survey procedure as a technique, its introduction and propagation must be recorded as the most important achievement in the sphere of statistical survey of that period. And it was the pragmatic group of mathematical statisticians who contributed most as technical experts, although we must not forget that they did so as the statistical technicians subordinated to bureaucrats, capitalists and bourgeois economists. Under the leadership of Ichiro Nakayama, a bourgeois economist, these mathematical statisticians completed their work in the "Statistical Dictionary" (1304 pages) (published in December 1951, enlarged edition in March 1959).

3 Social Economic Statisticians (Statisticians of modern economic school, Marxian economic school, etc.)

How to group the social economic statisticians in an attempt to clarify their contribution in statistical survey history, statistical utilization history, and theoretical history of statistics may involve many problems to be considered. For the present purpose, however, the author will confine himself simply to the grouping into the advocates of capitalism and the socialists in accordance with the kinds of social and economic system the statisticians support.

Equipped with the so-called modern economic theory of a super-historic view, the advocates of capitalism use freely the fashionable modern technique of analysis, by which very fact they are characterized as averting their eyes from the fundamental contradictions of modern society. Whether the so-called modern economics can or cannot be regarded as an integrated theory is a question that we must not make a hasty conclusion here, as it is the case with econometrics, for example.¹⁾ However, modern economists of Japan

1) Editorial Conference of The Statistical Bulletin on the Application of Mathematics to Economic Studies and Econometrics (Jap. translation of *the Statistical Bulletin* — Organ of Central Bureau of Statistics of USSR, September 1959, *The Statistics*, No. 8, April 1960).

are forming an united front against Marxian economics in such forms as a common contention, joint defense, concerted operation or cooperative study. Moreover, they are winning stronger support from monopoly capital,²⁾ any are attempting to secure unity in theory beyond eclecticism. But it is generally agreed that modern economics at present is still at the stage of containing various trends. For instance, KEIZAIGAKU DAIJITEN (The most voluminous Economic Dictionary edited by Ichirō Nakayama, a leading figure among modern economists of Japan after the war) (Published by Tōyō Keizai Shimpōsha, 1956) also lists Keynesian economics, general equilibrium theory, theory of business cycle, welfare economics, and econometrics as non-Marxian economics. Japanese economists, including Marxians as well, have still many aspects that justify a practical grouping by academic sectarianism of master and pupil or by the relation between boss and protégé. The limitation of the application of mathematics to economics may serve us as an effective criterion for grouping of modern economists. For the present, the author will group them into equilibrium theorists, Keynesians, and econometricians, and glance over the situations.

When one says economics based on equilibrium theory, it may usually comprehend many fields of modern economics in a broad sense, but to interpret it in a narrow sense, it simply means modern general equilibrium theory. As universally known, if it sticks too much to the escapism of the Austrian and Lausanne schools, it may get married to mathematics and become mathematical economics, but can never be linked to statistics of reality. But the leaders of modern general equilibrium theorists believe that their theory is a powerful instrument to analyze reality, and are reinforcing its propensity to tend towards reality. Their effort to modify their own theory, their attempt to examine and embrace macroscopic theory, and their intention to make their theory a dynamic theory and to link it to statistical values are some of the reinforced aspects of the theory tending towards reality. The conventional criticism directed upon the escapism of modern general equilibrium theory originating from Hicks has not been entirely satisfactory. Nevertheless, as far as this system is concerned, Japanese

2) For instance, the support of the Faculty of Economics, Osaka University, by the Rockefeller Foundation or the Kansai Economic Federation Endowment to Osaka University Economic Research Association; the connection between Tokyo's financial circles and Hitotsubashi University; The civil investigation board headed by Ichirō Nakayama as the managing director, which is sponsored by *The Federation of Economic Organizations, Japan Chamber of Commerce and Industry, Economic Council, and Japan Federation of Industrial Managers Associations*; etc.

economists³⁾ have made little contribution in statistical survey, statistical utilization as well as in the theory of statistics. Therefore, as to the scholars of this group, there is almost nothing worthy of attention in connection with statistics, although we may have to call in question their consciousness of the limitation of application of mathematics to economics.

As long as they are concerned about the functional relations in the world of pure mathematics regardless of the actuality which is to be the object of their study, there will never come up to their minds the consciousness of the limitation of mathematical application. But when they are confronted with a policy problem requiring a practical measure, they need to comprehend the material facts and to draw a plan based on them. Then, they will be urged to grapple with the problems of choosing mathematical forms and of their limitations. In this sense, the Keynesian economists have been concerned about the effectiveness of mathematical forms, and have made a great contribution in statistical survey and statistical utilization. The readjustment of financial and monetary business statistics, above all, depended much upon the Keynesian theory. The national income statistics was also rearranged and put to use by the Cambridge school together with the Keynesians. The postwar activities of the modern economists of Hitotsubashi University represented by Ichiro Nakayama⁴⁾ and Shigeto Tsuru⁵⁾ in concert with the government authorities ought to be watched with close attention.

Econometricians have made greater contributions worthy of attention in statistical utilization and statistical theory rather than in statistical survey. The activities of Isamu Yamada⁶⁾ and Kōichi Miyazawa⁷⁾ draw our attention, but they have produced nothing original. What looks bright in this science is nothing but the introduction of foreign achievements after all. If there is anything we may call Japanese, it will be the imitative application of foreign achievements to the Japanese reality, which is in vogue. It is assumed that the controversy over the adoption of econometrics in Soviet or the contention of O. Lange in Poland may bring another hot argument in the journalism world of Japan soon, although a general examination and

3) It was by Yasuma Takada, Ichiro Nakayama, Takuma Yasui, Hideo Aoyama and the like people that economics carrying the keynote of equilibrium theory was introduced and expounded. After the war, however, all of them have been converted to the Keynesian faith.

4) Jiro Sakamoto, *Professor Nakayama as a Man and His Doctrine* (in *Essays Compiled in Memory of the Sixty First Birthday of Dr. Ichiro Nakayama*, 1958).

5) Shigeto Tsuru and his associates are called left modern economists by some people, but it is true only in their political contention or behaviors. In theory, however, they have nothing different from the rightists.

6) Isamu Yamada, *Some Basic Problems of Econometrics*, 1949; Jap. translation (1955) of Haavelmo's "The Probability Approach in Econometrics," 1944.

7) Kōich Miyasawa, Jap. translation (1959) of Klein's "A Textbook of Econometrics," 1953.

criticism from a theoretical standpoint has already been made on the problem of application of mathematics to economics and the nature of econometrics by Sumihiro Korenaga,⁸⁾ Jyun Hirota,⁹⁾ Kōnosuke Yamada,⁹⁾ and other members of the Society of Economic Statistics.

The social statisticians of Marxian tendency has become enlivened again with the rise of the labor movement in Japan after the war, and gained a position strong enough to cope with modern economics. We shall examine how matters stand by grouping them into (i) the social democratic scholars and (ii) the Marx-Leninist scholars, but we should not also overlook the statistical achievements of (iii) democratic organizations (such as the Association of Democratic Scientists, labor unions, the Socialist Party, the Communist Party, etc.).

(i) As we have already seen, the statisticians standing on the social democrat position are the people belonging to the professor group of the so-called 'Labor-Farmer school' represented by Hyōe Ouchi; namely, Hiromi Arisawa, Gitaro Wakimura, Masao Takahashi, Ryokichi Minobe, and so forth. Emerging from the state of wartime submission, they found their footing in the statistical machinery of the national government, and joining hands with modern economists, they promoted the modernization—Americanization—of the government statistics of Japan. In the Society for the Study of Statistics (Ichiro Nakayama, managing director) which is an outer organization of the statistical machinery of the government, they also occupied an important position with modern economists.¹⁰⁾ They adhered to the government statistical machinery under the occupation rather than to carrying through the position of the laboring classes, and drove the Americanization of Japanese statistics. How much contribution they made is a subject of argument, but anyway, we have to admit that the role they played in statistical survey after the war was great.

In the field of statistical utilization, they lent support to the Socialist Cabinet in publishing the "Economic White-paper". The utilization of statistics by this group in the analysis of the present status of Japanese

8) Sumihiro Korenaga, "On the Meaning of Mathematical Method in Economics" (*Hokkaido University Economic Studies*, Nos. 5 & 13, 1957); "On the Use of Statistical Method in Econometrics" (*Materialism*, No. 7, June 1958); "On the controversy over the Methodology of Econometrics" (*Statistics*, No. 7, 1958); "On the Use of Mathematical Method in Economics" (*The Thought*, April 1959).

9) Jyun Hirota and Kōnosuke Yamada, "Critique of Econometrics" (in *Lectures on Criticism of Modern Economics*, Vol. 3, 1950).

10) See "A Ten Year History of Statistical Association", compiled by the Statistical Association Foundation, 1958. Among the principal participants in this, there are Ryokichi Minobe, the managing director (since 1947), Hiromi Arisawa, a director (since 1953), Hirozo Uno, a director (since 1953), Hyoe Ouchi, a consultant, and Masao Takahashi, a consultant, etc.

capitalist economy is not at all few, but they placed a greater importance on the deepening of economical meaning on the basis of existing statistics, rather than on the examination and criticism of statistics on the basis of economic theory. While they stand on the position of the Marxian economics, they borrow the concepts or theoretical models of modern economics in practical application, and show a tendency to modify the Marxian economic theory.¹¹⁾

In the theory of statistics, Hiromi Arisawa, Masao Takahashi and Harufumi Yonesawa do not have the statistical theory based on the social group theory. They do not necessarily go without referring to the group theory, but the reason why the theory of statistical examination and criticism cannot occupy an important position in their theory of statistics is mainly due to the weakness of their group theory. Their statistics largely consists in statistical technique centered on the method of statistical analysis, which is a borrowed thing from modern economics. This is well indicated by the fact that they ingrafted the theory and technique of sampling survey upon the conventional theory and technique of aggregate observation. The "dialectics of contingency and necessity" as "the basis of statistical method", which was proposed by Hiromi Arisawa and his associates, did not make any fresh development whatsoever.¹²⁾

Further in the third period, Torazo Ninagawa who, maintaining his social democratic viewpoint, laid the foundation of a statistical theory based on the social group theory, was elected the governor of Kyoto Prefecture after the war, and has become estranged from academic activity. But still he has a keen interest in the general drift of statistics.

(ii) The social statisticians with Marx-Lenin's views have been trying hard to carry through their class-conscious, critical attitude. Generally speaking, they have made no direct contribution to the government statistical survey. It may rather be appropriate to say that it was their job to criticize the class-spirited, defrauding, and unscientific nature of government statistics. One of their representative works was Shoichiro Uesugi's "Marxism and Statistics" (1951). Taking his ground on the social group theory of Ninagawa statistics, he regarded statistics as a social and historical product, and criticized the class character of existing statistics from the standpoint of Marxism.¹³⁾

11) Hiromi Arisawa & Takahide Nakamura, *National Income*, 1955. In the field of agriculture, for instance, Tsutomu Ouchi, *Japanese Capitalism and Agricultural Problems* (revised in 1952). Hirozo Uno is typical of this tendency in recent Japan.

12) Harufumi Yonesawa, *Statistics*, 1948; *The Development of Economic Statistics*, 1955.

13) Shoichiro Uesugi, *Economics and Statistics*, 1959.

Also it is necessary to point out that apart from government statistics, Marx-Leninist scholars have actively conducted numerous investigations of their own as one of the democratic organizations, to which we shall refer to, from a purely scientific stand-point. Not all of their investigations may properly be called statistical survey, nevertheless, it is worthy of particular attention that they have attempted statistical survey independently and from the position of the laboring classes, that at the same time, they have tried a theoretical examination of a representative sampling survey¹⁴⁾ in the course of their investigation activity, and lastly that they have demonstrated the need of an active cooperation on the part of the investigated in this type of survey.

The utilization of statistics from the position of Marx-Leninist economics has a tradition full of resistant spirit that has been handed down ever since "Lectures on the Development of Japanese Capitalism" were published before the war. Passing through "The National Monopoly Capitalism" by Harumaru Inoue and Seijiro Usami (1950) and its revised edition, "The Structure of Japanese Capitalism at a Crisis" (1951), the tradition was inherited by "Lectures on Japanese Capitalism" (ten volumes and an appendix, 1953-55),¹⁵⁾ although we must not disregard the inadequacy of their critical examination and method of utilization made of statistics in such manner, nor should we overlook their subjective, one-sided use of statistics.

What merits our attention with respect with the use of statistics by Marxian scholars after the war was a trial they made in the study by use of statistics the basic problems of Marxian economics such as the exploitation rate of laborer or the impoverishment of the proletariat.¹⁶⁾

14) Hiroshi Sato, On the Meaning of Model Survey, (*Hokkaido University Economic Studies*, No. 13, March 1958). It was Mao Tuoton's "Report on the Observation of the Farmers' Movement in Konan District" or "The Investigation in Kōkoku Prefecture" ("The Farmers' Movement and Farm-Village Investigation" translated by Chinese Institute, 1950) and other Chinese experiences in investigation activities that exerted an important influence upon model survey after war in Japan.

15) It is worthy of attention that in opposition to the government-originating "White-paper", white-papers or annual reports have been published from the standpoint of laboring classes. The Japan Teachers' Union, "Educational White-Paper" (since 1948); The World Economic Research Institute, *Annual Report of World Economy* (since 1948); The Society for the Investigation of Japanese Economy, *Quarterly Review of Japanese Economy* (since 1953).

16) The computation of the ratio of surplus value was tried by Kazuo Terajima, "Modern Japan from the Viewpoint of the Theory of Accumulation" (*Keizai Hyoron*, September 1935) in Japan even before the war. The computation of Shōichirō Uesugi may be the best of all in the postwar years. *Economic Statistic Data* No. 15", published by the National Economic Research Association, 1947; Computation of the Ratio of Surplus Value in Japanese Industries", *Osaka City University Economic Studies*, Vol. 3, No. 2, April 1952. Later it was put in "Economics and Statistics", 1959: "The Computation of the Ratio of Surplus Value" in Uesugi, Hirota & Tanuma's *The National Income Statistics in Postwar Japan*, *The Lectures on Japanese Capitalism*, Vol. 9, 1954, pp. 497-501.

Studies made from the Marx-Leninist position in the field of statistical theory after the war have not yielded satisfactory results. It has been pointed out that at the time when Fisherian mathematical statistics rushed into Japan through the American occupation forces, there was a tendency even among some of Marx-Leninist economists to ride on the stochastics boom and to accept it uncritically as a progressive and dialectic science. To this attitude was directed some criticism by social statisticians of so-called the 'Kyoto school', although almost ignored.¹⁷⁾ The charge was focused largely upon their mathematical formalism that defied the social and historical backgrounds of the object to which a statistical method was applied, and upon the role it was to play in the society. At the same time, these Marx-Leninist statisticians had assigned to themselves a task of overcoming the mechanical, non-dialectic, and unhistorical nature of Ninagawa theory of statistics which was an important inheritance of social statistics of pre-war Japan.¹⁸⁾ But this task was left unfinished.

(iii) We shall see the statistical activities of democratic organizations briefly.

(a) The Association of Democratic Scientists was organized in January 1946 for the purpose of establishing democratic sciences, spreading scientific knowledge and technique for the welfare of the nation, securing the freedom of scientific activities, and advancing the status of scientists and technicians. With the rise of labor movement after the war, the Association brought together scholars—of both natural and social sciences—ranging from Marxists to liberalists, and exerted a great influence on the studies and propagation of scientific knowledges and techniques in this country under the occupation. Originally, the Association was not a political organization, but it was Marxists and other leftist scholars who played an important role in the Association. In the field of statistics, the Association of Democratic Scientists and its organ in its early days provided mathematical statisticians with a stage for effective propagation of "the scientific" and "dialectic" nature of

17) Torazo Ninagawa gave warning to the uncritical use of random sampling technique into social phenomena in the public lecture (1948) of the Japan Statistical Society; Ryuken Ohashi, *The Social Character of Modern Statistics* (the subtitle: *Its Historical Position and Ideological Lineage*) *The Magazine Eighty Million People*, Vol. 3, No. 1, February 1949; Nijiya Morishita, *An Introduction to Statistical Survey—A Note on the Criticism of stochastics*, *Economic Magazine*, Vol. 24, No. 1, 1951; Shoichiro Uesugi, *Marxism and Statistics*, 1951.

18) Koichiro Utsumi, *On Dialectics and Ninagawa Statistics*, *The Statistics*, Organ of the Society of Economic Statistics, Vol. 1, No. 1, 1955.

stochastics,¹⁹⁾ and played an important part in implanting uncritical faith in stochastics. However, the propagation campaign of stochastics with its base of operations established in the Association has grown weak with the progress of the red purge and as the stochastics boom has fallen off. With respect to the activities of the Association in connection with statistics, there are a series of investigations conducted under the slogan of 'the national science', especially the farm-village survey, started in about 1952. These investigation activities were by no means free from imperfections, but we must not grudge due praise for their strong contention and efforts to return the results of investigation to the people.²⁰⁾

(b) Labor Unions: As the formation of labor unions has been progressing after the war, a greater use of government statistics as well as business statistics has been made by them. At the same time, survey activities by laborers in the interest of laborers themselves have become increasingly popular. Labor unions or their federations have instituted investigation departments of their own, while professional investigation agencies have appeared.²¹⁾ Out of this movement were born the criticism of government statistics by the laboring classes from their viewpoints²²⁾ and investigation theories framed to their benefit.²³⁾ Notwithstanding that these two things were not at all perfect in contents, they were epoch-making events reflecting the growth of the laboring classes.

(c) Both the Socialist and the Communist Parties, the political parties for the working classes, have also played a certain role in the field of statistics just as labor unions did. Both parties established their own investigation departments to guide their policy-making, and not only did they analyze government statistics, but also started investigation from an independent standpoint. Particularly the works of the Communist Party cannot be overlooked. Through its organ "The Advanced Guard" or other publications under its control, the Communist Party publicized the analysis it made of

19) Toshio Kitagawa, The Recognition of Statistics and Some Problems of the History of Statistical Science—For its Further Development, (1), (2), (The Association of Democratic Scientists, *The Natural Science*, No. 12, February 1948, No. 13, September 1948); Heihachi Sakamoto, "Statistical Mathematics" and "The Progress of Statistics" (The Association of Democratic Scientists, Annual Report on Sciences, the 2nd collection, August 1948), etc.

20) Tooru Hiroshige, The Association of Democratic Scientists (2), *The Nature*, February 1960.

21) The Investigation Department of the All-Japan Congress of Industrial Organizations (1946), the Investigation Department of the General Council of Trade Union of Japan (its organ, Chosa Jiho) as well as the Labor Union Investigation Council (its organ, Rodo Chosa Jiho).

22) The General Council of Trade Union of Japan, A Statistical Fighting against Fraudulence of Government Statistics, 1954.

23) Labor Investigation Council and Kansai Labor Investigation Congress, The Investigation Activities of Labor Unions, 1957.

the present status by use of government statistics.²⁴⁾ Also making it their motto to combine the entire activities through all members of the party and of the laboring people and their investigation activities, the Communist Party made important efforts exemplified by the introduction of the investigation activities of communist parties in China and France.²⁶⁾

As we have seen above, there were valuable attempts made on the part of Marxists in many fields, but their achievements have not yet been brought together to make an integrated whole, and in fact, they may not surpass even the prewar level. We may sum up the interests and characteristics of various social economic statisticians groups as follows:

Table of the Interests and Achievements of Social Economic Statisticians Groups in Japan

Nomenclature		Application of mathematics	Statistical survey	Use of statistics	Statistical theory	
					Criticism of statistics	Statistical technique
Modern economics	Equilibrium theorists	○	×	×	×	×
	Keynesians	○	○	○	×	×
	Econometricians	○	×	○	×	○
Marxian economics	Social democratic statisticians	×	○	○	×	×
	Marx-Leninite	×	×	○	○	×

This table is merely intended to present the general characteristics of different groups, and does not apply to individual statisticians. For example, Torazo Ninagawa belongs to the group of social democratic statisticians whereas he was the first theoretical statisticians to systematize statistical criticism in Japan.

III Future Task

If we limit our field of vision to our country alone, Japanese statistics seems to have made a rapid progress during the past century. But once we turn our eyes to the world at large, we shall see that Japan has just followed the steps of advanced nations in Europe and America, and has done nothing but the introduction of foreign achievements. Of course, there are some ori-

24) The Analysis of Japan under the Occupation (with a supplement), edited by the Investigation Committee of Japan Communist Party, 1953, 1955.

25) As its organ of guidance, the Communist Party published "Investigation and Policy", (No. 1, 1953 and thereafter).

26) The Investigation Committee of Japan Communist Party translated Yu Erh-yuan & Hung yen-lin's "Investigation, Examination, Inspection, and Consolidation" 1955, and edited "The Group Investigation, the Analysis and Consolidation", 1955.

ginal works in some parts, but generally it was all she could do to keep up with the world standard. It is just as same as Japanese politics or economy which, viewed narrowly, seems as if it took long strides, but looks miserable on the stage of the wide world. The backwardness of Japanese statistics has not yet been overcome. It is needless to say that to overcome this backwardness is the first task to be accomplished before anything else. For this, we have to introduce mathematical statistics of capitalist countries in Europe and America on one hand, while we need to bring in the Soviet statistical theory on the other hand. But the problem is how to introduce them.

Although the same thing was pointed out by Kensho Gato's "An Outline of the History of Statistics of Japan", we shall begin with a look at the task that Hyoe Ouchi set to the Japanese statistics. He says as follows: "Even if we confine ourselves to statistics alone, we saw a boom provoked by new statistics, the boom of a new theory of mathematical statistics. And it spread blind faith. It is apparent that the Japanese academic world has made an error in placing this new statistics in an unjust position because of this boom. It was a confusion due to the lack of academic training. A confusion as such would never be commended by the people of the world. In short, the theory as to the value of statistics as a social science (the use value) was poor. We may call it the poverty of statistical theory. But it is true that it was caused by the complexity of the Japanese society. It was, as it were, an unavoidable weakpoint.....From this, it is also true that there will be three requirements to be met by statistics of the future, namely, (i) Japanese social sciences should analyze the Japanese society more closely (the task of social sciences), (ii) Japanese statisticians must show what statistics Japan really needs (the task of statisticians on the use of statistics), and (iii) Japan should not seek only to raise her statistics to the international standard as the final goal, but should try to create statistics of her own (the task of those who make statistics—the task of government, enterprisers, labor unions, etc). The magnitude of the task corresponds to that of vision. This is the vision of Japanese statistics". "Fifty Years of Economics", Vol. II, 1959, pp. 405-6).

The Japanese statistical world, like the economic world, is under the direct influence of America. A shake of 1-mm in America may represent a shake of 10mm or even 100mm in our country. From 1952 through 1953, three associations were established in the United States for the study of the application of mathematical methods to economics; namely, Operations Research Society of America (publishing a quarterly magazine named Operations Research since 1952), Society for Industrial and Applied Mathematics

(publishing the Journal since 1953), and Controllers Institutes of America (publishing a monthly magazine called the Controllers since 1953). This brought about a "business management boom" in Japan. That is, it took the form of propaganda of the managerial ideas to the general public, and it almost amounts to saying "I am a manager and you, too." In the "scientific core" of the propaganda of this modern form of bourgeois ideology was placed "mathematics", and we must note that setting in which mathematicians are working very actively.

In parallel with the form of introduction of American statistics to Japan, it will be necessary for us to take a look at the form of introduction of Soviet statistical theory to this country. As known to all, the October revolution and the founding of a socialist country in Soviet in 1917 exerted a great influence upon our laboring classes as well, and lead to the activation of labor movement and to the formation of the Japan Communist Party (1922). With the rising tide of the socialist ideas in general, the statistical idea also put forth buds of "statistics from the position of the laboring classes" under this influence. Before and during the war, several Soviet works on statistics and economic balance were translated into Japanese¹⁾. During the war some governmental bodies paid attention to the planned economy of Soviet and the use of statistics there, as Japan had need of wartime economic control. However, the influence of the Soviet statistical world before and during the war was almost negligible both in theory and practice, and it was after the war that the Soviet statistics became popular and was paid particular attention in Japan.

In statistical practice, the Soviet statistical world did have an unique socialistic statistical system which had already been framed before the war and been in use as an instrument of planned economy. But in the realm of statistical science, it did not necessarily have a theoretical system of its own. Rather it seems to have been under the influence of British and A-

1) M. N. Schmidt, "Statistics and Dialectics" 1931, (translated by Yūichi Horie, 1936); Shvayatrovsky, "Interesting Statistics" (partial translation by Masahide Hiraoka under the title of "Statistics for the General Public" published in 1942); A. I. Rotschtn, Industrial Statistics in USSR, 1932, translated partly by M. Hiraoka in the *Tokei Shūshi* 1942; the materials on Soviet statistics prepared by the Investigation Department of the South-Manchurian Railroad, "Bulletin of Important Research Materials on Soviet" published by the Investigation Department of the Planning Board, "Bibliography of Russian Statistical Literatures of Soviet" by Asian Research Institute, etc. Also, "Bulletin of Soviet Statistics" type-written on the official stationery of 'the Government of His Majesty the Emperor of Japan' in April 1941 was distributed to some statistical researcher. The contents were "the Summary of Nemchinov's Report on Statistical Education", and "At the Front of Statistical Battle by Maluishiev". Just ten years later after the war, the Society of Economic Statistics distributed a typewritten pamphlet of the same articles to the members as Discussion Material No. 1 (April 1951).

merican statistics in basic points. The Soviet statistical world in the early postwar period is characterized by the introduction and the application to agricultural statistics of the Fisherian theory by Nemchinov. In the Soviet academic circles, too, the modern statistics originating from Fisher was lionized as the most advanced theory of statistics. But this trend naturally led to the overwhelming predominance of mathematical formalism, and to the separation of the academic research from the statistical practices burdened with a task of establishing a socialistic economy. The statistical controversy that took place in 1948 has developed into a dispute of highly scientific nature over the object, method and theoretical ground of the science of statistics. And the contention of the main force was finally confirmed by the statistical conference of 1954, after having been argued twice in 1950 and 1952 in spite of a stubborn resistance by the mathematical school. It was claimed that statistics is an independent social science "to study the quantitative aspects of numerous social phenomena in its unseparable relation to the qualitative aspects, and to search for an quantitative expression of the regularity of the social development in the concrete conditions of time and place". With this provisional conclusion as its ground, the Soviet statistical world advanced the theoretical and practical study programs, and could achieve a certain result.²⁾ The statisticians of the mathematical school also listened to a number of criticisms levelled at them from the viewpoint of the social science doctrine, and after the conference of 1954 they became to have a regard for that conclusion and turned towards the theoretical and methodological study of practical problems of social economic statistics. But with the recent movement of the introduction of the econometrician techniques in Soviet Russia, the formalistic views are coming to life again among mathematical statisticians. This is indicative of the fact that the conclusion of the statistical controversy between 1948 and 1954 was not a satisfactory answer to the problems both in theory and practice, nor was it decisive enough to subjugate the formalistic contention of the mathematical school³⁾.

The Japanese interest in Soviet statistics after the war may be divided into two kinds according to the differences in contents; namely (i) in the statistical practice in Soviet, and (ii) in statistical theory. In accordance with the subject that shows direct interest in Soviet statistics, it may be possible to divide it into (a) government statisticians and (b) statistical theorists. Being overawed by the overwhelming predominance of American statistics

2) Editing text-books, studying technical methodology of economic statistics, the grouping theory, the index theory, the balance method, etc.

3) Kōnosuke Yamada, On Recent Mathematical Formalism in Soviet Economics, *Rikkyo University Economic Studies*, February 1960.

imported very extensively, the attention paid to, and the introduction of Soviet statistical affairs among government statisticians are miserably weak. For all that, there are some government statisticians who persistently continue introducing Soviet statistics⁴.

But the people who have paid the greatest attention to the Soviet statistical world in the postwar years and have engaged devotedly in the introduction and adoption of Soviet statistics were those statisticians, especially the social statisticians advocating Marx-Leninist economics, who took a critical attitude towards the pragmatistic introduction of Anglo-American mathematical statistics and insisted upon statistics founded on social science. The statisticians of this school criticized the class character of formal mathematical bourgeois statistics, and paid their attention to the Soviet Statistical theory in the belief that it would prove to be a powerful reinforcement to assist them in establishing statistics from the position of laboring classes. They directed their attention mainly to the basic problems of utilizing of statistics and the discussion on statistics as a science in Soviet Russia, and attentively examined and interestedly introduced the statistical controversy to Japan. It is not until quite recently that the study and introduction of statistical technique of Soviet was started in Japan.⁵ Further more, the introduction of the statistical theory of Communist China is continued eagerly by Jiro Andō (see *the Statistics*, organ of the Society of Economic Statistics), but the study on Chinese statistics will be an important future task.

To the Japanese socio-economic statisticians who have been opposed to the pragmatistic manner of introducing Anglo-American statistics and have insisted upon statistics founded on social science, the Soviet statistical theory served as a powerful reinforcement. The introduction of Soviet statistical theory not only called for grave reflection on the part of some idolaters of Anglo-American mathematical statistics found even among progressive scholars, but also urged mathematical statisticians themselves to reconsider the limitation of modern mathematical statistics or to call into question the danger of its hasty application.

In theory, however, Soviet statistics has made little addition to the level of Japanese statistics. The basic position of laying the foundation of statistics not on the theory of probability but on the historical and materialism

4) For instance, "The Statistical Reporter" of the Statistical Standard Bureau, Japan Administrative Control Office (published since 1952).

5) Statistical Theory of Soviet Bk I, translated and compiled by the Society for the Study of Statistics, 1952; "Statistical Theory of Soviet Bk II, translated and compiled by the Society of Economic Statistics, 1953; The Object and Method of Statistics, edited by Hiromi Arisawa, 1956. The Society of Economic Statistics is planning to put out Bk III and IV of "Statistical Theory of Soviet", but there is no publisher undertakes them.

economics was in perfect concord with the views of Marx-Leninist socio-economic statisticians of our country, and was accepted by them without question. But the definition to treat statistics as an independent social science implies a logical structure of an independent science (statistics) being founded upon another independent science (economics). This is a knotty problem which prevents Soviet statistics from winning general acceptance in Japan. Japanese socio-economic statisticians criticized this crux by their theory of statistics as a science of method, by which social sciences draw conclusions from mass observation.

The following is the point on which we are keeping our eyes with much interest in the future trend of Soviet statistical theory. That is, how Soviet statistical theory will manage to secure the unity of the legitimate basic attitude of laying foundation of statistics on social science and the well-grounded practical requirements of more and more accurate mathematical procedures. It is anticipated that a simple-technical economic theory may gain popularity in Japan, too, but it is an interesting question how Soviet statistical theory with its recent movement of introducing econometric technique will solve theoretically the technical problems and the practical needs, and how it will overcome mathematical formalism.

Lastly, the author wants to touch briefly on how the Japan Statistical Society and the Society of Economic Statistics feel about their own tasks at present. In 1931, the year after the 19th Session of the International Statistical Institute was held in Japan, the Japan Statistical Society held the inaugural meeting at Kyoto Imperial University in April 27th. At that time, nearly all members of the Society were socio-economic scholars and teachers of universities, colleges and high schools, and consequently their sense of viewing things was exceedingly economic in nature. In 1960 the Society is going to hold the Twentieth Congress. Now many men of business from government offices and business firms are seen on the membership list, and their sense has become very practical and mathematical. The general meetings of the past two or three years have recorded many reports of personal experiences of investigation programming by statistical experts and numerous reports on experimental application of foreign experiences to Japan, but we can find few reports on theoretical studies. This Society's angle of viewing things has been shifting from the problems of economic nature in early years to those of formalistic application of mathematical statistics to business practices in government offices or business firms.

Those social economic statisticians who had maintained a critical attitude towards such a pragmatistic and mathematical formalistic tendency organized the Society of Economic Statistics in 1953, and held the first general

meeting at Kansai University in July 1957. The discussion at that meeting was centered on "The Fundamental Tasks of Statistics at This Stage in Japan".⁶⁾ Referring to the conclusion drawn at that meeting, Shichiro Matsukawa, a member of the Society, said to the following effect. There are three ways of approach to the fundamental tasks of statistics at this stage in Japan; namely, (i) as a logical approach, we have to clarify the nature of statistics as a science, and to rearrange and study deep into the subject of statistical methodology; (ii) to further our studies on the present status of statistics in actual use in our country—more emphasis should be laid on Japan, although the present status in foreign countries is also important; (iii) to delve into historical study and reflect on it deeply. The above three approaches to the fundamental tasks of statistics should be coordinated with the well-founded study of correct social science. Their efforts in this direction has begun to bear fruit in the reports of the third general meeting (held in November 1959) or in its organ *The Statistics* (No. 8 issued in April 1960).

Conclusion

Japanese book-stores are flooded with the so-called statistical books. But these books are practically the same in contents, and most of them are devoted to the introduction and exposition of European and American books on statistical techniques. The greater part of the papers dealing with statistical subjects concern either the exposition of some specific statistical techniques or examples of imitative application of these techniques, and original works are rarely to be found, if there is any. Moreover, such papers are intended to be useful for working statisticians in government offices or business firms. This is a fashion similar to the management boom, and these are that type of statistical books that would be useful only to those users who would proudly say 'I am a manager, and you, too.'

As opposed to statistics of this kind, some studies seeking to establish statistics based on social science, or to be more exact, "statistics based on a theory of social science, viewed from the position of the laboring classes" are being made. As long as one sticks to this standpoint, it is quite natural that he will never be satisfied with the bourgeois statistics or "statistics for the users" imported from capitalist countries in Europe and America. On the other hand, we have already seen that "the socialistic statistics" imported from USSR or Communist China was not useful to the laboring classes of

6) The discussion materials of the first general meeting, the reports at the general meeting, and the summary of discussion, published by the Society of Economic Statistics, July 1957; As to the introduction of the statistical theory of USSR and Communist China to Japan, see the Society's organ *The Statistics*, especially No. 8 (April 1960) for latest information.

Japan, either. This is perhaps because the laboring classes of Japan are not in the position of a ruler with sovereign power, unlike their counterparts in USSR or Communist China, nor are they identical with their associates in capitalist countries of Europe and America where labor unions are recognized as essential beings by their own right. The laboring classes of Japan are not recognized by the capitalist class, which fact is well exemplified by the Mitsui Miike coal mine dispute. They are always threatened by the uncertainty of their living, and are at the mercy of the capitalist class that is strong enough to disunion the laboring classes. Even the Coal Mine Workers Union, which is regarded as the strongest union in Japan is being forced into such a miserable condition. In small industries, it is not rare to find workers unallowed to organize themselves. Statistics for such weak laboring classes of Japan should be the one that will clarify in the concrete and in terms of quantity (i) the condition of the laboring classes and their movement, (ii) the condition of the capitalist class and its policy, and (iii) the tendency of Japanese capitalism. In fine, the science of statistics should be based on the theory of social science meant for protecting the interest of the laboring classes. Of course, the fighting against idealistic trend in natural statistics is imperative, and studies of natural statistics in accordance with the theory of natural science may be necessary in certain circumstances. But this is nothing but a wishful prospect for the future. Even though we should not neglect what the future may bring forth, no other statistics could be of urgent necessity to the laboring classes of Japan at the present stage than socio-economic statistics.

Among the theories of social science built up from the standpoint of the laboring classes, the Marxian theory is most important at present. Opinions are now divided on the interpretation of the Marx-Leninist theory, and questions are raised from the position of the theory of creation of revolutionary leftists on one hand, while from the social democratic viewpoint (by Hirozo Uno) on the other hand. As long as statistics remains resting on the theory of social science, its relations with these theories should be made clear. Once these relations are clarified, the Japanese science of statistics may find a sound logic in itself, resting on the theory of social science framed from the position of the laboring classes.

Such an attempt at establishing the science of statistics from the standpoint of the laboring classes will undoubtedly meet the counter-attack of various forms by the reactionary capitalist class and its advocates who refuse to listen to the views of the laboring classes. The capitalist class calls upon university to pursue studies directly useful to management, and the latter is showing an increased pragmatistic tendency in order to meet

the wishes of the former. The present indication of affairs necessitates more urgently the task of constructing statistical theory in a creative manner from the standpoint of the laboring classes, in obedience to the tradition of Japanese statistics oriented by Iwasaburo Takano.

—This paper is prepared to the meeting of statistics for social sciences at the 32 th Session of the International Statistical Institute.—